

REMARKS

Claims 68-77, 80-85, 107-115 and 118-127 were examined in the Office Action dated June 4, 2007. Claims 68, 80, 82, 84, 85 and 118 were amended, and claims 128-130 have been added. The subject matter of the amended claims and the new claims can be found in the originally filed specification at, for example, the text from page 29, line 16, to page 31, line 15, and in Figures 11-15. Therefore, claims 68-77, 80-85, 107-115 and 118-130 are presently pending in this application.

Although the present communication may include amendments or other changes to the application or claims, or characterizations of claim scope or referenced art, the owner does not concede in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The owner reserves the right to pursue any previously pending claims or other claims, whether broader or narrower, that are supported by the present disclosure under 35 U.S.C. § 112, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, any person reviewing the prosecution history of the present application, or the prosecution history of any parent or other related application, shall not reasonably infer that any subject matter supported by the present application has been disclaimed or disavowed.

The Office Action dated June 4, 2007, rejected all of the previously pending claims. More specifically, the claims were rejected on the following grounds:

- (A) claims 119 and 122 were rejected under 35 U.S.C. § 112, first paragraph;
- (B) claims 68-77, 80, 81, 84, 85, 107-115 and 118-127 were rejected over the combination of U.S. Patent No. 6,066,892 (Ding), the Lowenheim text (Lowenheim), the Alkire article (Alkire), U.S. Patent No. 5,685,970 (Ameen), and U.S. Patent No. 4,401,521 (Ohmura); and

(C) claims 82 and 83 were rejected under 35 U.S.C. § 103 over the combination of Ding, Lowenheim, Alkire, Ameen, Ohmura and U.S. Patent No. 5,814,557 (Venkatraman).

As a preliminary matter, the undersigned representative would like to thank Examiner Leader for holder a personal interview at the United States Patent and Trademark Office on October 9, 2007. During this interview, Examiner Leader and the undersigned representative discussed amended claim 68 and the prior art applied in the present Office Action. As noted in the Interview Summary provided by the Examiner, provisional agreement was reached that amended claim 68 overcomes the rejections of record based on Ding. The applicants accordingly request that this paper constitute the applicants' Interview Summary.

A. Response to Section 112 Rejection

Claims 119 and 122 were rejected under 35 U.S.C. § 112, first paragraph, on the grounds that the values for the initial resistivity of the electrolytically deposited copper are not supported by the originally filed specification. The applicants respectfully disagree because the initial resistivity values in claims 119 and 122 were calculated directly from the 1.5 micron film thickness (T) set forth in the originally filed specification and noting that the cross-section is a square such that L/W=1. The calculated initial resistivity values of the copper, more specifically, were determined according to the equation:

$$R_s = \frac{\tau(L)}{T(W)}$$

In light of the foregoing, the claimed initial resistivity values of the electrolytically deposited copper are supported by the originally filed specification. The applicants accordingly request withdrawal of the rejection of claims 119 and 122 under 35 U.S.C. § 112, first paragraph.

B. Response to Section 103 Rejection – Ding, Lowenheim, Alkire, Ameen and Ohmura

Claims 68-77, 80, 81, 84, 85, 107-115 and 118-127 were rejected under 35 U.S.C. § 103 over the combination Ding, Lowenheim, Alkire, Ameen and Ohmura. Without commenting on or conceding the merits of the rejection, independent claims 68, 80, 84, 85 and 118 have been amended as discussed during the October 9 personal interview. As noted in the personal interview, Ding does not teach the creation of a temperature gradient, and the amended claims overcome the rejections of record based on Ding. Therefore, the applicants respectfully request withdrawal of the rejection of claims 68-77, 80, 81, 84, 85, 107-115 and 118-127.

C. Response to Section 103 Rejection – Ding, Lowenheim, Alkire, Ameen, Ohmura, and Venkatraman

Claims 82 and 83 were rejected under 35 U.S.C. § 103 over the combination of Ding, Lowenheim, Alkire, Ameen, Ohmura and Venkatraman. For the reasons explained during the personal interview on October 9, 2007, a provisional agreement was reached that independent claim 82 also overcomes the rejection of record based on Ding. Therefore, the applicants also respectfully request withdrawal of the rejection of claims 82 and 83.

In light of the foregoing, all of the pending claims comply with 35 U.S.C. § 112 and are patentable over the references of record. The applicants accordingly request reconsideration of the application and respectfully submit that all the pending claims are in condition for allowance. If Examiner Leader has any questions or believes a teleconference would further expedite prosecution of this application, he is encouraged to contact the undersigned representative at (206) 359-3258.

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Reply to Office Action of June 4, 2007

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Respectfully submitted,

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